

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Previously Presented) The optical glass of claim 11 exhibiting a refractive index in the range of from 1.75 to 2.0, an Abbé number in the range of from 20 to 28.5, and a viscosity at a liquid phase temperature equal to or higher than 0.4 Pa·s.
2. (Previously Presented) The optical glass of claim 108 exhibiting a refractive index in the range of from 1.75 to 2.0, an Abbé number in the range of from 20 to 28.5, and a glass transition temperature equal to or less than 540°C.
3. (Previously Presented) The optical glass of claim 109 exhibiting a refractive index in the range of from 1.75 to 2.0, an Abbé number in the range of from 20 to 28.5, and a transmittance λ 80 is equal to or less than 500 nm and a transmittance λ 5 is equal to or less than 385 nm.

11. (Currently Amended) An optical glass comprising as molar percentages, 15-30 percent of P₂O₅; 0.5-15 percent of B₂O₃; 5-25 percent of Nb₂O₅; 6-40 percent of WO₃; 4-45 percent of at least one R'₂O selected from the group consisting of Li₂O, Na₂O, and K₂O, 1-5 percent of K₂O; 0-30 percent (excluding 30 percent) of at least one RO selected from the group consisting of BaO, ZnO, and SrO; and 2-9 percent of TiO₂; with the total content of the above-stated components being equal to or more than 95 percent, and wherein the optical glass does not comprise an amount of GeO₂.

12. (Original) The optical glass of claim 11 wherein said optical glass comprises 0-25 molar percent (excluding 0 molar percent) of BaO.

Claims 13-16 (Canceled)

17. (Previously Presented) The optical glass of claim 11 wherein said optical glass has the composition comprising, as essential components, P₂O₅, B₂O₃, WO₃, Nb₂O₅, TiO₂, BaO, ZnO, Li₂O, Na₂O and K₂O or the composition comprising the above essential components and Sb₂O₃.

18. (Previously Presented) The optical glass of claim 108 wherein said optical glass has the composition comprising, as essential components, P₂O₅, B₂O₃, WO₃, Nb₂O₅,

TiO₂, BaO, ZnO, Li₂O, Na₂O and K₂O or the composition comprising the above essential components and Sb₂O₃.

19. (Previously Presented) The optical glass of claim 109 wherein said optical glass has the composition comprising, as essential components, P₂O₅, B₂O₃, WO₃, Nb₂O₅, TiO₂, BaO, ZnO, Li₂O, Na₂O and K₂O or the composition comprising the above essential components and Sb₂O₃.

Claims 20-58 (Canceled)

59. (Previously Presented) The optical glass of claim 11 wherein said optical glass comprises 0-11 percent of BaO.

60. (Previously Presented) The optical glass of claim 11 wherein said total quantity of Li₂O, Na₂O, and K₂O is equal to or more than 29 percent.

61. (Previously Presented) The optical glass of claim 11, wherein said optical glass has a density of oxygen atoms contained in the range of from 4.2 x 10²² to 5.2 x 10²²/cm³.

62. (Previously Presented) The optical glass of claim 108 wherein said optical glass has a density of oxygen atoms contained in the range of from 4.2×10^{22} to $5.2 \times 10^{22}/\text{cm}^3$.

63. (Previously Presented) The optical glass of claim 109 wherein said optical glass has a density of oxygen atoms contained in the range of from 4.2×10^{22} to $5.2 \times 10^{22}/\text{cm}^3$.

Claim 64. (Canceled)

65. (Previously Presented) The optical glass of claim 11 wherein said optical glass comprises 2-30 molar percent of Li_2O .

Claims 66-69. (Canceled)

70. (Previously Presented) The optical glass of claim 11 wherein said optical glass exhibits a glass transition temperature equal to and/or less than 530°C and a yield point temperature equal to or less than 580°C .

71. (Previously Presented) The optical glass of claim 108 wherein said optical glass exhibits a glass transition temperature equal to and/or less than 530°C and a yield point temperature equal to or less than 580°C.

72. (Previously Presented) The optical glass of claim 109 wherein said optical glass exhibits a glass transition temperature equal to and/or less than 530°C and a yield point temperature equal to or less than 580°C.

73. (Previously Presented) The optical glass of claim 62 wherein said optical glass exhibits a glass transition temperature equal to and/or less than 530°C and a yield point temperature equal to or less than 580°C.

74. (Previously Presented) The optical glass of claim 11 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

75. (Previously Presented) The optical glass of claim 108 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

76. (Previously Presented) The optical glass of claim 109 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

77. (Previously Presented) The optical glass of claim 62 wherein said optical glass exhibits a refractive index in the range of from 1.7 to 2.0, an Abbé number in the range of from 20 to 32.

78. (Previously Presented) The optical glass of claim 11 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

79. (Previously Presented) The optical glass of claim 108 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

80. (Previously Presented) The optical glass of claim 109 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

81. (Previously Presented) The optical glass of claim 62 wherein said optical glass exhibits a liquid phase temperature equal to or less than 970°C.

82. (Previously Presented) An optical part being composed of the optical glass of
claim 1.

83. (Previously Presented) An optical part being composed of the optical glass of
claim 2.

84. (Previously Presented) An optical part being composed of the optical glass of
claim 3.

85. (Previously Presented) An optical part being composed of the optical glass of
claim 12.

86. (Previously Presented) An optical part being composed of the optical glass of
claim 11.

87. (Previously Presented) An optical part being composed of the optical glass of
claim 17.

88. (Previously Presented) An optical part being composed of the optical glass of
claim 60.

89. (Previously Presented) An optical part being composed of the optical glass of
claim 108.

90. (Previously Presented) An optical part being composed of the optical glass of
claim 109.

91. (Previously Presented) An optical part being composed of the optical glass of
claim 62.

92. (Previously Presented) A glass preform being composed of the optical glass of
claim 1.

93. (Previously Presented) A glass preform being composed of the optical glass of
claim 2.

94. (Previously Presented) A glass preform being composed of the optical glass of
claim 3.

Claims 95-100 (Canceled)

101. (Previously Presented) A glass preform being composed of the optical glass of claim 62.

102. (Withdrawn) A method of manufacturing glass preforms wherein a prescribed amount of a piece of molten glass flowing out of a flowout pipe is received in a receiving mold to prepare a glass preform made of the optical glass of claim 1.

103. (Withdrawn) A method of manufacturing glass preforms made of the optical glass of claim 1, comprising the steps of :

a molten glass glob is made to fall by causing molten glass flowing out of a flowout pipe to drip naturally or by cutting with a cutting blade;

the molten glass glob is received in a depression in a forming mold, and in the process, air, a nonreactive gas or some other gas is blown out through minute holes in the depressions; and,

a layer of air is generated between the molten glass glob and the inner surface of depression in the forming mold and the molten glass glob is maintained and cooled within the depression in a state of essential non-contact with the inner surface of the depression until at least a portion of the outer surface of the molten glass glob reaches a temperature not greater than the melting temperature.

104. (Withdrawn) A method of manufacturing glass products comprising the steps of:

heating the glass preform prepared by the method of claim 102; and
precisely press molding the heated glass preform to obtain a glass product.

105. (Previously Presented) The optical glass of claim 108 wherein said optical glass comprises 0-11 percent of BaO.

106. (Previously Presented) The optical glass of claim 109 wherein said total quantity of Li₂O, Na₂O, and K₂O is equal to or more than 29 percent.

107. (Withdrawn) A method of manufacturing glass products comprising the steps of:

heating the glass preform prepared by the method of claim 103; and
precisely press molding the heated glass preform to obtain a glass product.

108. (Currently Amended) An optical glass comprising, as molar percentages, 17-30 percent of P₂O₅, 1-10 percent of B₂O₃ (where the total quantity of P₂O₅ and B₂O₃ is 18-32 percent), 5-25 percent of WO₃, 10-23 percent of Nb₂O₅, 1-9 percent of TiO₂ (where the total quantity of WO₃, Nb₂O₅ and TiO₂ is 28-40 percent), 5-22 percent Li₂O, 4-22 percent Na₂O, 0.5-7 percent K₂O (where the total quantity of Li₂O, Na₂O, and K₂O is 12-38

percent), 2-23 percent of BaO, 1-10 percent of ZnO (where the total quantity of BaO and ZnO is 3-25 percent), 0-8 percent of CaO, 0-8 percent of SrO, 0-4 percent of Al₂O₃, 0-4 percent of Y₂O₃, 0-1 percent of Sb₂O₃, and 0-1 percent of As₂O₃, where the total of all of these components is not less than 94 percent, and wherein the optical glass does not comprise an amount of GeO₂.

109. (Currently Amended) An optical glass comprising, as molar percentages, 14-32 percent of P₂O₅, 0.5-13 percent of B₂O₃ (where the total quantity of P₂O₅ and B₂O₃ is 16-32 percent), 5-40 percent of WO₃, 5-23 percent of Nb₂O₅, 1-9 percent of TiO₂ (where the total quantity of WO₃, Nb₂O₅ and TiO₂ is 25-42 percent), 5-27 percent Li₂O, 3-27 percent Na₂O, 0.5-7 percent K₂O (where the total quantity of Li₂O, Na₂O, and K₂O is 12-43 percent), 0-23 percent of BaO, 0-17 percent of ZnO (where the total quantity of BaO and ZnO is 0-25 percent), 0-8 percent of CaO, 0-8 percent of SrO, 0-4 percent of Al₂O₃, 0-4 percent of Y₂O₃, 0-1 percent of Sb₂O₃, and 0-1 percent of As₂O₃, where the total of all of these components is not less than 94 percent, and wherein the optical glass does not comprise an amount of GeO₂.

110. (Currently Amended) The optical glass of claim 108 wherein said total quantity of Li₂O, Na₂O, and K₂O is equal to ~~one or~~ more than 29 percent.

111. (New) A glass preform composed of an optical glass comprising, as molar percentages, 15-30 percent of P_2O_5 , 0.5-15 percent of B_2O_3 ; 5-25 percent of Nb_2O_5 ; 6-40 percent of WO_3 ; 4-45 percent of at least one R'_2O selected from the group consisting of Li_2O , Na_2O , and K_2O , 1-5 percent of K_2O ; 0-30 percent (excluding 30 percent) of at least one RO selected from the group consisting of BaO , ZnO , and SrO ; and 2-9 percent of TiO_2 ; with the total content of the above-stated components being equal to or more than 95 percent.

112. (New) The glass preform according to claim 111, wherein the optical glass comprises 0-25 molar percent (excluding 0 molar percent) of BaO .

113. (New) The glass preform according to claim 111, wherein the optical glass has the composition comprising, as essential components, P_2O_5 , B_2O_3 , WO_3 , Nb_2O_5 , TiO_2 , BaO , ZnO , Li_2O , Na_2O , and K_2O or the composition comprising the above essential components and Sb_2O_3 .

114. (New) The glass preform according to claim 111, wherein the total quantity of Li_2O , Na_2O , and K_2O is equal to or more than 29 percent.

115. (New) A glass preform composed of an optical glass comprising, as molar percentages, 17-30 percent of P_2O_5 , 1-10 percent of B_2O_3 (where the total quantity of P_2O_5 ,

and B_2O_3 is 18-32 percent), 5-25 percent of WO_3 , 10-23 percent of Nb_2O_5 , 1-9 percent of TiO_2 (where the total quantity of WO_3 , Nb_2O_5 and TiO_2 is 28-40 percent), 5-22 percent of Li_2O , 4-22 percent of Na_2O , 0.5-7 percent of K_2O (where the total quantity of Li_2O , Na_2O , and K_2O is 12-38 percent), 2-23 percent of BaO , 1-10 percent of ZnO (where the total quantity of BaO and ZnO is 3-25 percent), 0-8 percent of CaO , 0-8 percent of SrO , 0-4 percent of Al_2O_3 , 0-4 percent of Y_2O_3 , 0-1 percent of Sb_2O_3 , and 0-1 percent of As_2O_3 , where the total of all of these components is not less than 94 percent.

116. (New) A glass preform composed of an optical glass comprising, as molar percentages, 14-32 percent of P_2O_5 , 0.5-13 percent of B_2O_3 (where the total quantity of P_2O_5 and B_2O_3 is 16-32 percent), 5-40 percent of WO_3 , 5-23 percent of Nb_2O_5 , 1-9 percent of TiO_2 (where the total quantity of WO_3 , Nb_2O_5 and TiO_2 is 25-42 percent), 5-27 percent of Li_2O , 3-27 percent of Na_2O , 0.5-7 percent of K_2O (where the total quantity of Li_2O , Na_2O , and K_2O is 12-43 percent), 0-23 percent of BaO , 0-17 percent of ZnO (where the total quantity of BaO and ZnO is 0-25 percent), 0-8 percent of CaO , 0-8 percent of SrO , 0-4 percent of Al_2O_3 , 0-4 percent of Y_2O_3 , 0-1 percent of Sb_2O_3 , and 0-1 percent of As_2O_3 , where the total of all of these components is not less than 94 percent.